AMENDMENTS TO THE CLAIMS:

1. (Currently Amended) A data transmission method, which processes data through an N-bit bus, comprising the steps of:

converting M-bit format data, which is a basic data unit for data processing, to N-bit format data, which is a basic data unit for data transmission, ; and

transmitting the converted N-bit format data to a data processing device.

2. (Currently Amended) A data transmission method, which processes data through an N-bit bus, comprising the steps of:

transmitting N-bit format data, which is a basic data unit for data transmission, from a data processing device; and

converting the transmitted N-bit format data to M-bit format data, which is a basic data unit for data processing.

3. (Currently Amended) A data transmission method, which processes data through an N-bit bus, comprising the steps of:

converting N-bit format data, which is a basic data unit for data transmission, to M-bit format data, which is a basic data unit for data processing,; and

writing the converted M-bit format data in a buffer memory.

4. (Currently Amended) A data transmission method, which processes data through an N-bit bus, comprising the steps of:

reading M-bit format data, which is a basic data unit for data processing, from a buffer memory; and

converting the M-bit format data thus read to N- bit format data, which is a basic data unit for data transmission.

5. (Original) The data transmission method according to claim 1, wherein with respect to a conversion system from the M-bit format data to the N- bit format data, first data constituted by first, second and third packets, second data constituted by fourth, fifth and sixth packets, third data constituted by seventh, eighth and ninth packets and fourth data constituted by tenth, eleventh and twelfth packets are inputted, the method comprising:

a first control process of outputting fifth data constituted by the first, fourth, second and fifth packets;

a second control process of outputting sixth data constituted by the third and sixth packets;

a third control process of outputting seventh data constituted by the seventh, tenth, eighth and eleventh packets;

a fourth control process of outputting eighth data constituted by the ninth and twelfth packets; and

a fifth control process of inputting the sixth data and the eighth data and outputting ninth data constituted by third, sixth, ninth and twelfth packets.

6. (Original) The data transmission method according to claim 4, wherein with respect to a conversion system from the M-bit format data to the N- bit format data, first data constituted by first, second and third packets, second data constituted by fourth, fifth and sixth packets, third data constituted by seventh, eighth and ninth packets and fourth data constituted by tenth, eleventh and twelfth packets are inputted, the method comprising:

a first control process of outputting fifth data constituted by the first, fourth, second and fifth packets;

a second control process of outputting sixth data constituted by the third and sixth packets;

a third control process of outputting seventh data constituted by the seventh, tenth, eighth and eleventh packets;

a fourth control process of outputting eighth data constituted by the ninth and twelfth packets; and

a fifth control process of inputting the sixth data and the eighth data and outputting ninth data constituted by third, sixth, ninth and twelfth packets.

7. (Original) The data transmission method according to claim 2, wherein with respect to a conversion system from the N-bit format data to the M- bit format data, first data constituted by first, second, third and fourth packets, second data constituted by fifth, sixth, seventh and eighth packets, and third data constituted by ninth, tenth, eleventh and twelfth packets are inputted, the method comprising:

a first control process of outputting fourth data constituted by the first, fifth and second packets;

a second control process of outputting fifth data constituted by the third, seventh and fourth packets;

a third control process of inputting the second data, and outputting sixth data constituted by the sixth, seventh and eighth packets after carrying out a shifting process to the right by one packet;

a fourth control process of outputting seventh data constituted by the ninth, sixth and tenth packets; and

a fifth control process of outputting eighth data constituted by the eleventh, eighth and twelfth packets.

8. (Original) The data transmission method according to claim 3, wherein with respect to a conversion system from the N-bit format data to the M- bit format data, first data constituted by first, second, third and fourth packets, second data constituted by fifth, sixth, seventh and eighth packets, and third data constituted by ninth, tenth, eleventh and twelfth packets are inputted; the method comprising:

a first control process of outputting fourth data constituted by the first, fifth and second packets;

a second control process of outputting fifth data constituted by the third, seventh and fourth packets;

a third control process of inputting the second data, and outputting sixth data constituted by the sixth, seventh and eighth packets after carrying out a shifting process to the right by one packet;

a fourth control process of outputting seventh data constituted by the ninth, sixth and tenth packets; and

a fifth control process of outputting eighth data constituted by the eleventh, eighth and twelfth packets.

9. (Original) The data transmission method according to claim 3, wherein with respect to a conversion system from the N-bit format data to the M- bit format data, first data constituted by first, second, third and fourth packets, second data constituted by fifth, sixth, seventh and eighth packets, and third data constituted by ninth, tenth, eleventh and twelfth packets are successively inputted, the method comprising:

a first data holding step of holding the first, second and third data;

a second data holding step of holding the fourth, eighth and twelfth packets;

a data selection step of inputting the data held in the first data holding step; allowing the higher-order one packet to shift to the second data holding step; allowing the lower-order three packets of the first, second and third data to shift to a transmit control step as the fourth, fifth and sixth data; and when, upon completion of the steps, data corresponding to three packets has been stored in the second data holding step, switching steps to shift to the transmit control step with the data being used as the seventh data constituted by the fourth, eighth and twelfth packets; and a transmit control step of successively transmitting the fourth, fifth, sixth and seventh data that have been shifted from the data selection step to a buffer memory area.

10. (Currently Amended) The data transmission method according to claim 4, wherein with respect to a conversion system from the M-bit format data to the N- bit format data, first data constituted by first, second and third packets, second data constituted by fourth, fifth and sixth packets, third data constituted by seventh, eighth and ninth packets, and fourth data constituted by tenth, eleventh and twelfth packets are inputted, the method comprising:

a transmit control step of allowing the sequence to successively proceed to a data selection step together with the first, second, third and fourth data;

a data selection step of, in the case when, among the data inputted at the transmit control step, the first data is inputted, allowing the sequence to proceed to [[~~the~~]] a second data holding step, and in the case when the second, third and fourth data are inputted, respectively adding the first, second and third packets held at the second data holding step to the higher-order packets to form the fifth, sixth and seventh data, and allowing the sequence to proceed to [[~~the~~]] a first data holding step;

the first data holding step of holding the fifth, sixth and seventh data outputted from the data selection step; and

the second data holding step of holding the first data outputted at the data selection step.

11. (Currently Amended) A data transmission method, which processes data through an N-bit bus, comprising a multi-format conversion step of:

dividing M-bit format data, which is a basic data unit for data processing, into packets of s-bits that correspond to the greatest common measure of M and N; and converting q-number of data having an M-bit format constituted by s bits×p packets to p-number of data having an N- bit format, which is a basic data unit for data transmission, constituted by s bits×q packets, by using r- number of packets corresponding to the least common multiple of M÷s=p and N÷s=q as one unit.

12. (Currently Amended) A data transmission method, which processes data through an N-bit bus, comprising a multi-format conversion step of:

dividing N-bit format, which is a basic data unit for data transmission, data into packets of s-bits that correspond to the greatest common measure of N and M; and converting p-number of data having an N-bit format constituted by s bits×q packets to q-number of data having an M- bit format, which is a basic data unit for data processing, constituted by s bits×p packets, by using r- number of packets corresponding to the least common multiple of M÷s=p and N÷s=q as one unit.

13. (Original) The data transmission method according to claim 1, wherein the N-bit bus is a 32-bit bus, the N-bit format data is 32-bit format data and the M-bit format data is 24-bit format data.

14. (Original) The data transmission method according to claim 2, wherein the N-bit bus is a 32-bit bus, the N-bit format data is 32-bit format data and the M-bit format data is 24-bit format data.

15. (Original) The data transmission method according to claim 3, wherein: the N-bit bus is a 32-bit bus, the N-bit format data is 32-bit format data and the M-bit format data is 24-bit format data.

16. (Original) The data transmission method according to claim 4, wherein: the N-bit bus is a 32-bit bus, the N-bit format data is 32-bit format data and the M-bit format data is 24-bit format data.

17. (Original) The data transmission method according to claim 11, wherein: the N-bit bus is a 32-bit bus, the N-bit format data is 32-bit format data and the M-bit format data is 24-bit format data.

18. (Original) The data transmission method according to claim 12, wherein: the N-bit bus is a 32-bit bus, the N-bit format data is 32-bit format data and the M-bit format data is 24-bit format data.

19. (Currently Amended) A data transmission apparatus, which processes data through an N-bit bus, comprising:

means which converts M-bit format data, which is a basic data unit for data processing, to N-bit format data, which is a basic data unit for data transmission; and

means which transmits the converted N-bit format data to a data processing device.

20. (Currently Amended) A data transmission apparatus, which processes data through an N-bit bus, comprising:

means which transmits N-bit format data, which is a basic data unit for data transmission, from a data processing device; and

means which converts the transmitted N- bit format data to M-bit format data, which is a basic data unit for data processing.

21. (Currently Amended) A data transmission apparatus, which processes data through an N-bit bus, comprising:

means which converts N-bit format data, which is a basic data unit for data transmission, to M-bit format data, which is a basic data unit for data processing; and

means which writes the converted M-bit format data in a buffer memory.

22. (Currently Amended) A data transmission apparatus, which processes data through an N-bit bus, comprising:

means which reads M-bit format data, which is a basic data unit for data processing, from a buffer memory; and

means which converts the M-bit format data thus read to N-bit format data, which is a basic data unit for data transmission,.

23. (Original) The data transmission apparatus according to claim 19, wherein with respect to the conversion system from the M-bit format data to the N-bit format data, first data constituted by first, second and third packets, second data constituted by fourth, fifth and sixth packets, third data constituted by seventh, eighth and ninth packets and fourth data constituted by tenth, eleventh and twelfth packets are inputted, the apparatus comprising:

first control means which outputs fifth data constituted by the first, fourth, second and fifth packets;

second control means which outputs sixth data constituted by the third and sixth packets;

third control means which outputs seventh data constituted by the seventh, tenth, eighth and eleventh packets;

fourth control means which outputs eighth data constituted by the ninth and twelfth packets; and

fifth control means which receives the sixth data and the eighth data and outputs ninth data constituted by third, sixth, ninth and twelfth packets.

24. (Original) The data transmission apparatus according to claim 22, wherein with respect to the conversion system from the M-bit format data to the N-bit format data, first data constituted by first, second and third packets, second data constituted by fourth, fifth and sixth packets, third data

constituted by seventh, eighth and ninth packets and fourth data constituted by tenth, eleventh and twelfth packets are inputted, the apparatus comprising:

first control means which outputs fifth data constituted by the first, fourth, second and fifth packets;

second control means which outputs sixth data constituted by the third and sixth packets;

third control means which outputs seventh data constituted by the seventh, tenth, eighth and eleventh packets;

fourth control means which outputs eighth data constituted by the ninth and twelfth packets; and

fifth control means which receives the sixth data and the eighth data and outputs ninth data constituted by third, sixth, ninth and twelfth packets.

25. (Original) The data transmission apparatus according to claim 20, wherein with respect to the conversion system from the N-bit format data to the M-bit format data, first data constituted by first, second, third and fourth packets, second data constituted by fifth, sixth, seventh and eighth packets, and third data constituted by ninth, tenth, eleventh and twelfth packets are inputted, the apparatus comprising:

first control means which outputs fourth data constituted by the first, fifth and second packets;

second control means which outputs fifth data constituted by the third, seventh and fourth packets;

third control means which receives the second data, and outputs sixth data constituted by the sixth, seventh and eighth packets after carrying out a shifting process to the right by one packet;

fourth control means which outputs seventh data constituted by the ninth, sixth and tenth packets; and

fifth control means which outputs eighth data constituted by the eleventh, eighth and twelfth packets.

26. (Original) The data transmission apparatus according to claim 21, wherein with respect to the conversion system from the N-bit format data to the M-bit format data, first data constituted by first, second, third and fourth packets, second data constituted by fifth, sixth, seventh and eighth packets, and third data constituted by ninth, tenth, eleventh and twelfth packets are inputted, the apparatus comprises:

first control means which outputs fourth data constituted by the first, fifth and second packets;

second control means which outputs fifth data constituted by the third, seventh and fourth packets;

third control means which receives the second data, and outputs sixth data constituted by the sixth, seventh and eighth packets after carrying out a shifting process to the right by one packet;

fourth control means which outputs seventh data constituted by the ninth, sixth and tenth packets; and

fifth control means which outputs eighth data constituted by the eleventh, eighth and twelfth packets.

27. (Original) The data transmission apparatus according to claim 21, wherein with respect to the conversion system from the N-bit format data to the M-bit format data, first data constituted by first, second, third and fourth packets, second data constituted by fifth, sixth, seventh and eighth

packets, and third data constituted by ninth, tenth, eleventh and twelfth packets are successively inputted, the apparatus comprising:

first data holding means which holds the first, second and third data;

second data holding means which holds the fourth, eighth and twelfth packets;

data selection means which receives the data held in the first data holding step, allows the higher-order one packet to shift to the second data holding step, allows the lower-order three packets of the first, second and third data to shift to a transmit control step as the fourth, fifth and sixth data; and when, upon completion of the steps, data corresponding to three packets has been stored in the second data holding step, switches steps to shift to the transmit control step with the data being used as the seventh data constituted by the fourth, eighth and twelfth packets; and

transmit control means which successively transmits the fourth, fifth, sixth and seventh data that have been shifted from the data selection step to a buffer memory area.

28. (Original) The data transmission apparatus according to claim 22, wherein with respect to the conversion system from the M-bit format data to the N-bit format data, first data constituted by first, second and third packets, second data constituted by fourth, fifth and sixth packets, third data constituted by seventh, eighth and ninth packets, and fourth data constituted by tenth, eleventh and twelfth packets are inputted, the apparatus comprising:

transmit control means which successively transmits the first, second, third and fourth data to data selection means;

data selection means which receives data from the transmit control means, and when the first data is inputted, outputs the data to second data holding means, while, when the second, third and fourth data are inputted, respectively adds the first, second and third packets held at the second data

holding means to the higher-order packets thereof to form fifth, sixth and seventh data, and outputs the fifth, sixth and seventh data to first data holding means;

first data holding means which receives and holds the fifth, sixth and seventh data outputted from the data selection means; and

second data holding means which receives and holds the first data outputted from the data selection means.

29. (Currently Amended) A data transmission apparatus, which processes data through an N-bit bus, comprising:

multi-format conversion means which divides M- bit format data, which is a basic data unit for data processing, into packets of s-bits that correspond to the greatest common measure of M and N and converts q-number of data having an M-bit format constituted by s bits×p packets to p-number of data having an N- bit format, which is a basic data unit for data transmission, constituted by s bits×q packets, by using r- number of packets corresponding to the least common multiple of M÷s=p and N÷s=q as one unit.

30. (Currently Amended) A data transmission apparatus, which processes data through an N-bit bus, comprising:

multi-format conversion means which divides N- bit format data, which is a basic data unit for data transmission, into packets of s-bits that correspond to the greatest common measure of N and M, and converts p-number of data having an N-bit format constituted by s bits×q packets to q-number of data having an M- bit format, which is a basic data unit for data processing, constituted by s bits×p packets, by using r- number of packets corresponding to the least common multiple of M÷s=p and N÷s=q as one unit.

31. (Original) The data transmission apparatus according to claim 19, wherein: the N-bit bus is a 32-bit bus, the N-bit format data is 32- bit format data and the M-bit format data is 24-bit format data.

32. (Original) The data transmission apparatus according to claim 20, wherein: the N-bit bus is a 32-bit bus, the N-bit format data is 32- bit format data and the M-bit format data is 24-bit format data.

33. (Original) The data transmission apparatus according to claim 21, wherein: the N-bit bus is a 32-bit bus, the N-bit format data is 32- bit format data and the M-bit format data is 24-bit format data.

34. (Original) The data transmission apparatus according to claim 22, wherein: the N-bit bus is a 32-bit bus, the N-bit format data is 32- bit format data and the M-bit format data is 24-bit format data.

35. (Original) The data transmission apparatus according to claim 29, wherein: the N-bit bus is a 32-bit bus, the N-bit format data is 32- bit format data and the M-bit format data is 24-bit format data.

36. (Original) The data transmission apparatus according to claim 30, wherein: the N-bit bus is a 32-bit bus, the N-bit format data is 32- bit format data and the M-bit format data is 24-bit format data.

37. (New) The data transmission method according to claim 1 or claim 4, wherein the converting comprises:

dividing M-bit format data into packets of s-bits that correspond to the greatest common measure of M and N; and

transforming q-number of data having an M-bit format constituted by s bits×p packets to p-number of data having an N- bit format constituted by s bits×q packets, using r- number of packets corresponding to the least common multiple of M÷s=p and N÷s=q as one unit.

38. (New) The data transmission method according to claim 2 or claim 3, wherein the converting comprises:

dividing N-bit format data into packets of s-bits that correspond to the greatest common measure of N and M; and

transforming p-number of data having an N-bit format constituted by s bits×q packets to q-number of data having an M- bit format constituted by s bits×p packets, by using r- number of packets corresponding to the least common multiple of M÷s=p and N÷s=q as one unit.

39. (New) The data transmission method according to claim 19 or claim 22, wherein the converting comprises:

dividing M-bit format data into packets of s-bits that correspond to the greatest common measure of M and N; and

transforming q-number of data having an M-bit format constituted by s bits×p packets to p-number of data having an N- bit format constituted by s bits×q packets, using r- number of packets corresponding to the least common multiple of M÷s=p and N÷s=q as one unit.

40. (New) The data transmission method according to claim 20 or claim 21, wherein the converting comprises:

dividing N-bit format data into packets of s-bits that correspond to the greatest common measure of N and M; and

transforming p-number of data having an N-bit format constituted by s bits×q packets to q-number of data having an M- bit format constituted by s bits×p packets, by using r- number of packets corresponding to the least common multiple of M÷s=p and N÷s=q as one unit.